

Remarks/Arguments:

Claims 1-8 are presently pending. Claim 1 has been amended. Reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 103

Page 2 of the Office Action sets forth "Claims 1-8 are rejected under 35 U.S.C. 103(a) as being...unpatentable over Nobuo et al. (Japanese patent publication number S62-44108) in view of Goodnight (US patent number 6,457,561B1) further in view of Choi (US patent number 5,971,724) and Fujiwara et al. (US patent number 4472114)." Applicant respectfully submits that this rejection is overcome by the amendments to the claims for the reasons set forth below.

Applicant's invention, as recited by claim 1, includes features which are neither disclosed nor suggested by Harper, namely:

the annular lubricant groove has an inner rim and an outer rim on the upper end of the main shaft, and each of the second end of the forward leading groove and the second end of the reverse leading groove opens to the inner rim of the annular lubricant groove.... (emphasis added)

This means that the inner rim and the outer rim of the annular lubricant groove are located on the upper end of the main shaft. Both the forward and reverse lead grooves open to the inner rim of the annular lubricant groove at their respective second ends. This feature is described in the originally filed application, for example, at page 4, lines 13-21; page 5, line 26 to page 6, line 2; page 7, lines 11-14; and FIGS. 1-3. No new matter is added. Applicant submits that one of ordinary skill in the art would understand the above-mentioned portions of the specification, and particularly the horizontal line at the top of main shaft 123 in FIGS. 1-3, as disclosing a recessed upper end of main shaft 123 such that the inner and outer rims of annular lubricant groove are formed on the upper end of the main shaft.

The Office Action acknowledges that Nobuo in view of Goodnight and Choi fails to disclose the limitation of "the annular lubricant groove has an inner rim and an

outer rim [and] the second end of the forward leading groove...opens to the inner rim of the annular lubricant groove." Applicant respectfully submits that the addition of Fujiwara fails to make up for the deficiencies of Nobuo, Goodnight, and Choi with respect to at least these features.

Fujiwara is directed to an electric compressor. Fujiwara discloses an electric compressor 10 having a rotating shaft 58 supported in a bearing 64. A guide groove 70 is formed on the outer surface of rotating shaft 58. Bearing 64 includes a gain portion 72 connected to the guide groove 70. See Fujiwara at column 4, lines 11-35, and FIG. 1.

As illustrated in FIG. 1 of Fujiwara, gain portion 72 is formed entirely on bearing 64. Fujiwara fails to illustrate any part of gain portion 72 being formed on an upper surface of rotary shaft 58. Further, Fujiwara must therefore also fail to illustrate guide groove 70 opening to a part of gain portion 72 that is formed on an upper surface of rotary shaft 58. This is different from the claimed invention because claim 1 requires that the annular lubricant groove be formed, at least in part, on an upper surface of the main shaft. Claim 1 further requires that the forward leading groove open to part of the annular lubricant groove that is formed on the upper surface of the main shaft, i.e., the inner rim. Accordingly, Applicant respectfully submits that Fujiwara fails to disclose, teach, or suggest "the annular lubricant groove has an inner rim and an outer rim on the upper end of the main shaft, and each of the second end of the forward leading groove and the second end of the reverse leading groove opens to the inner rim of the annular lubricant groove," as recited in claim 1.

It is because Applicant's claimed invention requires that the annular lubricant groove have an inner rim and an outer rim on the upper end of the main shaft that the following advantages are achieved. "[R]everse leading groove 139 opens into inner rim of annular lubricant groove 141, and the lubricant is pushed to the outer rim of annular lubricant groove 141 by the centrifugal force [generated by the rotation of main shaft 123], so that little amount of the lubricant flows [backward] into reverse leading groove 139." See the original application at page 5, line 26 to page 6, line 2. Similarly, "[F]orward leading groove 137 opens into inner rim of annular lubricant groove 141, and the lubricant is pushed to the outer rim of annular lubricant groove

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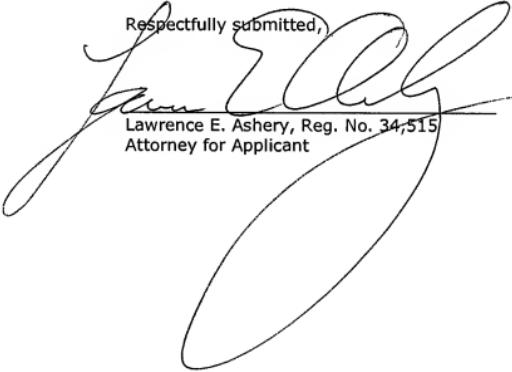
141 by the centrifugal force [generated by the rotation of main shaft 123], so that little amount of the lubricant flows [backward] into forward leading groove 137." See the original application at page 7, lines 11-14.

Accordingly, for the reasons set forth above, claim 1 is allowable over the art of record. Withdrawal of the rejection and allowance of claim 1 is respectfully requested.

Claims 2-8 include all of the features of claim 1, from which they depend. Thus, claims 2-8 are also allowable over the art of record for at least the reasons set forth above with respect to claim 1. Withdrawal of the rejection and allowance of claims 2-8 is respectfully requested.

Applicant respectfully asserts that the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,


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